

PUBLIC HEALTH DEPARTMENT,
GUILDHALL, CAMBRIDGE.

March 5th, 1936.

To the Chairman and Members of the Local Education Authority.

MR. CHAIRMAN, LADIES AND GENTLEMEN,

I have the honour to present for your consideration the 28th Annual Report upon the medical inspection of the elementary school children in Cambridge.

Upon the medical side, work has proceeded on the same lines as in former years. On page 10 there will be found an interesting record by Dr. Smyth of his experience in the use of the audiometer as a means of detecting deafness. As was anticipated its use has served the useful purpose of detecting deafness which by the simpler tests used in former years might well have been overlooked.

It is also interesting to record that in spite of the continued absence of diphtheria in epidemic form, the number of children immunised shows a gratifying increase.

The year 1935 is the first complete year in which we have had the service of three whole-time dentists. It is now confidently anticipated that not only will the accumulation of arrears of work soon be overtaken, but that all the work of inspection and treatment for the whole elementary school population will be accomplished within the year.

I have again to record my indebtedness to Dr. Smyth, Mr. Lambert and Miss Wallis, who are responsible for the greater part of this report.

I am,

Your obedient Servant,

ANDREW J. LAIRD,

School Medical Officer.

MEMBERS OF THE HYGIENE SUB-COMMITTEE OF THE EDUCATION COMMITTEE.

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Report of the School Medical Officer

FOR THE YEAR 1935.

Population of the Borough	74,110
Area of the Borough...	...	...	...	10,057 acres
Number of Elementary Schools	...	...	...	23
Number of Departments	...	...	...	35

Year ended March 31st. 1927 1928 1929 1930 1931 1932 1933 1934 1935

Average number of children on registers...	7060	6924	6823	6805	6858	7141	7251	7273	7276
Average number of children in attendance	6273	6266	6065	6170	6256	6446	6566	6581	6595

Staff.—

School Medical Officer...	...	...	Andw. J. LAIRD, M.D., C.M., D.P.H.
Assistant School Medical Officer			Arthur J. SMYTH, M.B., B.Ch., D.P.H.
Public Dental Officer	...		W. Baird GRANDISON, L.D.S., R.C.S.
Assistant Public Dental Officers			C. HARRIS, L.D.S. R. B. PICKLES, L.D.S.
Bacteriologist	...	...	W. H. HARVEY, M.D. (Part time)
School Nurses	...	...	Miss M. M. W. STEVENS Miss F. A. NICHOLLS Miss T. GIBBONS
Dental Attendants	...	...	Miss D. MALLETT Miss E. IMPEY Miss ALLENSBY
Clerk	...	...	Miss G. A. M. WALLIS

together with the part-time services of the Chief Clerk in the Public Health Department.

School Premises.—The new Chesterton Senior School with accommodation for 360 boys and 360 girls was opened on September 2nd, 1935.

The following schools became Junior Schools from the 2nd September, 1935, the senior children being transferred to Chesterton Senior School :—

Brunswick Boys' and Girls'.

Milton Road Mixed.

St. Luke's Boys' and Girls'.

New Street Junior Mixed and Infants' School became an Infants' School on September 30th, 1935, the junior children being transferred to Brunswick Boys' and Girls' Schools.

Expenditure.—The expenditure for the year ended March 31st, 1935, was :—

		£	s.	d.
Medical inspection and treatment	...	2586	16	4
Dental inspection and treatment	...	2400	9	7
Open Air School	...	4320	19	3

The annual cost per child on the school registers for medical and dental inspection and treatment was 13/9 gross. The cost in terms of a penny rate was 1.91d.

GENERAL REVIEW OF THE WORK OF THE SCHOOL MEDICAL SERVICES IN CAMBRIDGE.

Groups of Children Inspected.—The groups selected for routine inspection were (1) first admissions to the public elementary schools; (2) those attaining the age of eight years, and (3) those attaining the age of twelve years; groups usually referred to as "entrants," "intermediates" and "leavers."

In addition, a large group composed of children selected for inspection for some special reason, and others who were being kept under observation for some defect detected at a previous examination, were also inspected during the year.

The numbers examined belonging to the three routine groups are shown below.

Routine Cases :	Boys	Girls.	Total
Entrants	407	383	790
Intermediates	334	317	651
Leavers	383	340	723
	—	—	—
	1124	1040	2164

Special Inspections, 3966; re-inspections, 1404.

The number at routine inspections represents 33 per cent. of the number of children in average attendance.

The fluctuations in the routine groups from 1928 are shown below:—

The following Table shows the number of routine inspections carried out at the various schools :—

		Entrants.		Intermediates		Leavers.	
		Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Brunswick Council	...	31	31	53	44	60	67
Central	...	—	—	—	—	91	74
Milton Road	...	41	38	30	40	30	20
Morley Memorial	...	28	26	30	30	—	11
Newnham Croft	...	9	4	4	8	—	—
New Street	...	22	11	10	14	—	—
Park Street	...	12	14	13	8	—	—
Richmond Road	...	12	14	2	1	—	—
Romsey Council	...	—	—	30	7	45	28
St. Andrew's	...	1	—	26	27	—	—
St. Barnabas	...	18	22	6	7	—	—
St. George's	...	—	—	—	—	40	50
St. Giles'	...	4	4	—	—	—	—
St. Luke's	...	36	41	29	16	57	29
St. Matthew's	...	19	15	15	16	—	—
St. Paul's	...	8	17	7	12	—	—
St. Philip's	...	60	47	42	56	42	54
Sedley	...	33	22	15	14	—	—
Shirley	...	53	53	—	—	—	—
Union Road R.C.	...	5	2	6	4	7	2
Cherry Hinton	...	12	12	9	9	11	5
Trumpington	...	3	10	7	4	—	—
		407	383	334	317	383	340
		79	—	651	—	723	—

Co-operation of Parents.—The percentage of parents present at the routine inspections was 80.0, being a trifle lower than the previous year, and varied from 43 per cent. to 98 per cent.

REVIEW OF THE FACTS DISCLOSED BY INSPECTION.

The defects noted at both "routine" and "special" inspections will be found in Table II A, page 20.

The total number of "defects" found at "routine" and "special" inspections to require treatment was 1,742, slightly less than in the previous year, and the number requiring to be kept under observation was 947, also slightly fewer than in 1934.

The number of "individual children" found at routine inspection to require treatment shows an increase from 272 in 1934, to 364 in 1935, and was 16.8 per cent. of the children examined in the three routine groups. This figure is exclusive of uncleanliness and dental disease, but includes for the first time children found to require treatment on account of their defective nutritional condition.

Among the "entrants" the percentage requiring treatment was 10.3, and among the "intermediates" and "leavers," 21.9 and 19.3 per cent.

The total number of children with no defects was 1092, or 50.5 per cent. of the number examined at routine medical inspection.

Before making any comparison of the percentage of defects in the three age groups, it should be borne in mind that the vision of "entrants" is not tested.

The average height and weight of the children are set out below, and show no significant departure from the previous year.

Boys.

Age in Years.	No. Examined in 1935.	Average Height in Inches.					Average Weight in Pounds.				
		1912	1932	1933	1934	1935	1912	1932	1933	1934	1935
5	216	40.5	42.65	42.67	42.55	43.10	38.2	42.63	41.54	41.37	41.57
8	337	46.4	49.08	48.94	48.81	49.79	47.6	56.33	55.88	57.01	56.95
12	364	54.9	56.40	56.80	56.31	56.51	72.9	82.63	80.42	81.84	80.60

GIRLS.

Age in Years.	No. Examined in 1935.	Average Height in Inches.					Average Weight in Pounds.				
		1912	1932	1933	1934	1935	1912	1932	1933	1934	1935
5	210	40.5	41.99	42.15	41.89	42.89	37.6	40.92	40.33	39.53	41.01
8	318	46.0	48.87	48.77	49.24	49.06	49.7	55.61	54.47	54.93	54.69
12	269	55.3	57.26	57.23	57.37	57.76	71.3	83.59	83.97	83.97	84.79

Nutrition.—One hundred and fifty-four children were classed as suffering from slight malnutrition, and three as definitely malnourished.

The causes of malnutrition appear to be much the same as those discovered at the enquiry into the matter last year.

This year an attempt was made to ascertain as accurately as possible the parents' income in these cases.

Sixty-four parents were interviewed personally, and in 9 cases the income, after deduction of rent, amounted according to their data, to under 5/- per head per week, in 6 cases the income was under 6/- per head, in 11 cases it was under 7/- per head, in 15 cases it was 10/- or over. The parents of 15 children preferred not to give particulars, but there was no question of poverty in these instances.

This year's investigation bears out that of last year, namely, that poverty does not seem to play an important rôle in Cambridge in the causation of malnutrition.

Cleanliness and Clothing.—The high standard of cleanliness among the elementary school children of Cambridge has been fully maintained.

Observations on clothing and cleanliness of body at routine inspection are misleading because the child is usually dressed in its Sunday best for the occasion, and has had a bath the day before. However this may be, there can be no doubt that bodily cleanliness has greatly improved in recent years. It is uncommon to see a really dirty child at any of the schools, and such an occurrence is attended by marked surprise and concern instead of being accepted as the usual state of affairs.

The clothing too, is on the whole both more sensible and of better quality than formerly, and shoes are usually watertight and well fitting.

The total number of individual children found unclean at school by the School Nurses during the visits they have made specially for this purpose during 1935, was 863, as compared with 662 in 1934.

The proportion found with pediculi in their heads was 1.4 per cent. In 1934 the proportion was 1.2 per cent.

No proceedings were taken under Section 122 of the Children Act, 1908, but proceedings in Court were taken under the School Attendance Bye-Laws in 10 cases, and fines from 2/6 to 5/- were inflicted in 3 of these, 1 was convicted but no penalty imposed, and 6 were dismissed with a caution.

As was mentioned in the annual report for last year, owing to an extensive outbreak of "pink" eye, a trial of paper towels was made in a few schools. This has proved so satisfactory that the use of these towels has been extended to all the elementary Schools in the Borough.

Ringworm.—Only 2 new cases occurred, 1 of the body and 1 of the scalp. These were treated at Addenbrooke's Hospital. There were no cases at the end of the year.

The new cases discovered each year from 1923 were as follows:—

1923	'24	'25	'26	'27	'28	'29	'30	'31	'32	'33	'34	'35
24	26	15	11	14	16	2	9	12	5	3	5	2

Tonsils and Adenoids.—380 children (17.6 per cent.) had considerably enlarged tonsils. 13 also suffered from adenoids. Of these 126 required treatment as compared with 138 in 1934.

Cripples and Deformities.—The defects found include:—flat foot, 153; after effects of rickets, 10; spinal curvature, 7; round shoulders, 12; bad posture, 6; knock knees, 9; flat chest, 4; over-riding toes, 5; depressed sternum, 5; deformed hands and feet, 2; defective toes, 6; after effects of infantile paralysis, 4, and other conditions, 4.

The increase in numbers of children recorded as suffering from flat foot may be partly due to the fact that this condition is now noted even when of slight degree only, and that particular attention is paid to it in young children.

It is true that many children outgrow the tendency to flat foot as general muscular tone improves, but it is nevertheless well that they should be kept under observation over a period of years.

Defective Vision.—The number of children found at routine inspection to have defective vision (6/12 or worse) was 120. Of these 59 required treatment, 6 were recorded for observation and the remaining 55 had already received treatment.

In addition to the above 120 children, 60 "specials" were examined, 22 during routine inspection and 38 at the Clinic. All except 7 required treatment.

Squint.—Twenty-four children were noted with squint in the year. 16 of these required treatment, 8 were very slight, one being kept under observation.

The treatment of squint involves both the correction of the deformity, and the restoration of function of the squinting eye with the re-establishment of binocular vision.

The first step is to correct the error in vision, which often exists, the next to improve the vision of the squinting eye by enforcing its use; the good eye being covered with a shade, the bad eye is forced to work. This treatment needs great perseverance, and the co-operation of the school teachers is very much appreciated, as without it the task would usually be hopeless. Even with the recovery of sight in the squinting eye the squint will not be cured unless binocular vision can be established. When sight is improved in the squinting eye this often happens, but sometimes it needs further treatment.

Some authorities have special squint Clinics in which the power of fusion is trained by means of instruments for the purpose. This treatment absorbs considerable time, and it is felt that at present the number of squints in Cambridge hardly justifies the expenditure of time and money needed.

From a cosmetic point of view, squint can be corrected by operation. This procedure is carried out in suitable cases at Addenbrooke's Hospital. It does not, however, restore the function to the squinting eye if this has been lost.

External Eye Disease.—The conditions found were Blepharitis 8, Squint 24, and 4 other conditions, making a total of 36. The total number of similar conditions in 1934 was 21.

Ear Disease and Deafness.—The number of children found with defective hearing was 96, or 4.3 per cent. of those inspected. Twelve had a purulent ear discharge (0.6 per cent.). The percentages for several years are given for comparison.

	1927	1928	1929	1930	1931	1932	1933	1934	1935
Otorrhoea	0.9	0.7	0.7	0.6	0.4	0.1	0.6	0.5	0.6
Deafness	3.4	3.4	3.0	1.8	1.9	0.8	2.1	1.7	4.3

A gramophone Audiometer was purchased by the Committee on January 9th, 1935, and though longer experience will be necessary before its full value can be appreciated, some account of its use is now possible.

The Audiometer is essentially a gramophone with a magnetic pickup which permits a record to be heard with exactly equal intensity through a number of headphones.

These receivers are arranged in sets of 8, and it is possible to join two or more sets together so that from 16 to as many as 40 children can be tested at the same time.

The record is standardised, and the same record is used for each group of children. A record can be used about 100 times, after which it becomes worn and must be discarded.

The record used consists of a series of two digit numbers spoken in an ordinary voice, electrically recorded, and stepped down in intensity from loud speaking voice to a level, which, if heard, indicates a hearing of more than normal acuteness.

One of the School Nurses has been instructed in the use of the instrument, and all the children of 8 years and over, examined at routine medical inspection, have had their hearing tested by the Audiometer. The test was repeated in every case in which the hearing was only slightly below normal, or if the child did not seem to grasp what was required of it.

It is essential to have absolute quiet during the test, as the slightest extraneous noise tends to distract the attention of the child. Even under ideal conditions, it appears to need more concentration than some of the children can muster to hear the quieter ranges of the voice. Occasionally a child is encountered who is frightened by the apparatus. The child who cannot concentrate, the frightened child, and those children whose hearing is in doubt, are retested at the Clinic under conditions as nearly ideal as possible.

In all, 1,461 children were tested in the following age groups :—

Age	...	8.	9.	10.	11.	12.	13.
Number	...	531	122	61	54	597	96

Among this number 62 were found to have more than 9 units loss of hearing in one or both ears.

Age.	<i>Defective hearing in right ear.</i>	<i>left ear.</i>	<i>Both ears.</i>
8	9	16	15
9	2	1	—
10	2	—	2
11	1	3	—
12	3	4	1
13	1	2	—

It has so far only been possible to use the Audiometer for testing the hearing of children at the three routine age groups.

In 1934 the figures for defective hearing discovered at routine inspection showed a total of 34.

In 1935, 62 children were discovered by the Audiometer to have imperfect hearing.

To quote Sir Frederick Menzies, Chief School Medical Officer to the L.C.C. :—“ Whatever objections may be advanced against the Gramophone Audiometer, none can be regarded as serious, and indeed most that have been put forward are quite remediable by careful attention to conditions of testing. In any case it is without equal as a method of sorting out children with hearing defects expeditiously, and it is especially useful in detecting unilateral defects of the less severe grade which would in all probability be overlooked without its aid.”

Other Defects.—These include 46 children with irregular action of the heart, 12 stammerers, 22 with indication of nervous instability, and 13 suffering from anaemia.

Vaccination.—The proportion of children found with vaccination marks in 1935 was 27.7 per cent., this being 0.3 per cent. less than the previous year.

INSPECTION CLINIC.

The Clinic is open every weekday, including Saturdays, from 9.30 a.m. until 1 p.m. The Assistant Medical Officer, three School Nurses, and a Clerk are in attendance.

The total number of children inspected at the Clinic during 1935 was 8,073, 1,088 more than in 1934.

The attendances in 1935 numbered 12,310, an increase of 718 as compared with 1934.

The average daily attendance during 1935 was 49.

Special Examinations for Physical or Mental Defect.—A number of children are examined at the Clinic who come under special groups, either physical or mental. They include the children who are receiving milk in the schools on medical grounds; those whose condition suggests the need for a period at the Open Air School, and those whose mental capacity is in question.

The children specially examined for mental defect in 1935 numbered 65 (45 boys and 20 girls). The number recommended for the Special School was 6 (3 boys and 3 girls).

The number examined for physical defects was 101 (50 boys and 51 girls). Of these 100 were recommended for the Open Air School.

INFECTIOUS DISEASES AMONG ELEMENTARY SCHOOL CHILDREN.

The following table shows the incidence of Infectious Disease among school children:—

	1927	1928	1929	1930	1931	1932	1933	1934	1935
Scarlet Fever ...	92	127	56	106	52	62	112	126	112
Diphtheria ...	51	79	162	49	23	12	6	2	3
Influenza ...	17	—	1	—	—	—	82	—	—
Measles ...	113	726	316	453	110	634	209	83	1054
German Measles	10	24	4	5	1	2	4	11	60
Whooping Cough									
Chicken Pox ...	297	121	195	244	213	250	196	357	224
Mumps ...	195	21	20	9	218	270	15	15	11
Ringworm ...	3	8	2	6	—	5	3	4	1
Scabies ...	1	—	1	—	—	1	3	—	—
Skin Diseases ...	15	16	7	13	1	12	12	19	30
“Pink Eye” ...	—	—	—	—	—	—	—	347	7
Others ...	63	78	102	74	25	71	84	66	80
Totals ...	1103	1246	992	1201	725	1534	928	1210	1620

Diphtheria Immunisation.—One morning in the week is reserved at the School Clinic for Schick testing and Diphtheria immunisation. This time is unfortunately still sufficient, *i.e.*, parents are not bringing forward their children in sufficient numbers to make it necessary to arrange additional times for treatment.

As a rule 25—30 children are inoculated, and 20—25 Schick tested in a morning.

	1935.	1934.
Number inoculated ...	827	319
Number “Schicked” ...	578	288

Of those Schicked 417 proved negative, *i.e.*, were completely immunised; 161 were positive, *i.e.*, were not protected; of these 106 received a further inoculation, 25 refused further treatment, and 15 were tested for a second time, 13 proving negative and 2 still positive.

Six were tested for the third time and all proved negative.

One was tested for the fifth time and proved negative, a good example of perseverance rewarded.

Eight children were tested before inoculation and proved negative, *i.e.*, protected by Nature.

During this year the material for inoculation has been changed from Toxoid antitoxin mixture (T.A.M.), a substance requiring three inoculations, to Alum precipitated toxoid, which requires only a single injection.

This substance, though not giving so high a percentage of protected children, has proved very satisfactory. Between 60 and 70 per cent. have been protected by one dose, and well over 95 per cent. of those receiving a second dose have been immunised.

Two hundred consecutive cases were visited to find out whether the child had suffered from any reaction after the inoculation, and in no case was any upset recorded.

Since therefore 60—70 per cent. of children receiving a single inoculation of this substance are immunised, it appears reasonable to continue its use as a one dose method, and to offer the other 30 or 40 per cent. of children the opportunity of a second injection.

It is to be hoped that with a reasonable chance of one injection only, parents will be more ready to bring their children for this most valuable and satisfactory preventive treatment.

School Closure.—Eight departments had an attendance below 60 per cent. during the year on account of measles.

TREATMENT OF DEFECTS.

The total number of children treated for minor ailments was 1,096, being 35 less than in the previous year. In addition treatment was given to 124 for defective vision, 66 for diseases of the throat and nose, and 4,378 for dental disease, making a total of 5,664 cases treated in 1935, as compared with 5,388 in 1934.

1. *Hospital Treatment.*—Three hundred and seventy-eight school children received treatment at Addenbrooke's Hospital, the conditions requiring treatment being :—Disease of the ears, 85 ; eyes, 14 ; ringworm, 2 ; tonsils and adenoids, 86 ; skin disease, 13 ; minor injuries, 15 ; flat feet, 68 ; over-riding toes, 8 ; knock-knees, 7 ; various other conditions, 95 ; making a total of 393 defects in 378 children.

In addition, a number of children have received Light Treatment at the Hospital.

2. *Treatment at the School Clinic.*—The number of children treated at the school clinic was 497, a decrease of 98 compared with the preceding year ; the number of attendances for treatment shows a decrease from 5,199 in 1934 to 4,714 in 1935.

One hundred and twenty-four refractions were carried out during 1935. Lenses were prescribed in 18 cases of hypermetropic astigmatism, 14 cases of mixed conditions, 17 cases of hypermetropia, 34 cases of myopia, and 20 cases of myopic astigmatism.

In 25 cases spectacles were found to be of no benefit, and the cases were deferred for periods ranging from 3 to 6 months for further examination.

In 2 cases refraction was performed, but old glasses were retained, and 2 cases left school before receiving glasses. Five cases were referred to Addenbrooke's Hospital. Sixteen cases remained under observation at the end of the year.

During the year 74 children received spectacles under the Authority's scheme. 96 per cent. of the errors of refraction dealt with during the year were dealt with at the Clinic.

WORK OF THE SCHOOL NURSES.

The total number of visits made to schools in the year was 643, of which 139 were in connection with the routine medical inspections, 241 for the cleanliness survey, 3 in connection with infectious diseases, and the remainder for various other purposes.

Only one visit was paid to the schools in connection with the occurrence of Diphtheria among the scholars, and "swabbings" for bacteriological examination were taken from the throats and noses of 47 children. All gave negative results.

As a matter of interest, in view of the remarkable freedom from diphtheria for several years, three of the schools were visited in order to discover whether there was a similar freedom from the "carrying" state. Altogether 126 children were swabbed with entirely negative results.

The "home" visits numbered 2,809 in the year; 979 for the purpose of following-up cases of defects found at routine inspections, 1,426 in connection with infectious disease, and 404 visits of enquiry as to the cause of absence of children notified as ill by Head Teachers and School Attendance Officers.

The figures in 1934 were :—Total home visits 2,691, following-up 998, infectious diseases 1,171 absentees 522.

OPEN AIR SCHOOL.

Delicate and Physically Defective Children.—The number on the register of the Open Air School in Milton Road at the beginning of the year was 117. During the year 81 children left and 84 were admitted, the figures for 1934 being 83 left and 80 admitted. Of the 81 children who left the school during the year, 72 returned to their ordinary schools, 8 left the town, and 1 had reached school leaving age.

During the past year the work of the Open Air School has been very satisfactory. The following types of case have attended during the year :—

Asthma	...	...	...	...	3
Bronchitis	...	...	...	...	9
Rheumatism and Rheumatic Heart	...				6
Enlarged Glands	...	...	...	...	8
Contacts of Tuberculosis	...	...	...	...	11
Debility from various causes	...				36
Cripples	...	...	...	...	4
Anaemia	...	...	...	...	8
Nervous Children	...	...	...	...	7
Convalescence after acute illness	...				3
Defective nutrition	...	...	...	...	2
Various other conditions	...	...	...	...	13

Mention may again be made of the benefit derived from it by the nervous child.

Two misconceptions about the Open Air School need to be corrected. The impression that it is a school for consumptives is still common, and must again be contradicted.

There are also some who believe that the Open Air School and Special School are one. This erroneous idea has frequently to be rectified and explained away.

LIGHT TREATMENT AT THE OPEN AIR SCHOOL.

This treatment is given three mornings a week, the period of treatment for each case varying from six weeks to four months.

The number treated during the year was 48—20 boys and 28 girls.

The conditions treated included glandular enlargements, 21; debility and anaemia, 14; bronchial conditions and colds, 4; rheumatism, 1; skin conditions, 3; nervousness, 2; and contacts of tuberculosis, 3. All the children treated made good progress, and by the end of the year 12 had returned to the ordinary schools.

SPECIAL SCHOOL.

This was formerly known as the Observation Class, but was certified as a special school under Part V of the Education Act, 1921, from September 1st, 1932.

The number in the school at the beginning of 1935 was 46. Seventeen left and 1 was admitted, leaving 30 children in attendance at the end of 1935. Of the 17 who left, 1 had reached the age of 16, 13 were granted permission to leave, 1 was admitted to an Institution, 1 left the town, and 1 returned to ordinary school.

INSTITUTIONAL CARE.

The number of defective children maintained in Institutions by the Education Committee during 1935 was : blind 2, deaf and dumb 5, mentally defective 3, and 1 heart case.

SUPERVISION BY THE TUBERCULOSIS OFFICER.

The number of children reported upon by the Tuberculosis Officer during the year was 42. Eight were excluded from attending school and 18 were recommended for the Open Air School.

TUBERCULOSIS IN SCHOOL CHILDREN.

The number of children of school age notified to be suffering from tuberculosis each year from 1925 is shown in the following statement :—

NOTIFICATIONS OF NEW CASES RECEIVED AT AGES 5-14 YEARS DURING THE YEARS 1925 TO 1935.

	Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.	
	Boys.	Girls.	Boys.	Girls.
1925 ...	15	13	9	5
1926 ...	10	6	6	8
1927 ...	25	13	10	6
1928 ...	9	9	3	1
1929 ...	6	6	3	6
1930 ...	3	1	2	4
1931 ...	2	2	1	2
1932 ...	—	1	2	2
1933 ...	—	—	4	3
1934 ...	—	—	2	—
1935 ...	—	—	4	5

VOLUNTARY AGENCIES.

Every year a number of delicate children are sent for a change of air to the seaside by members of the Invalid Children's Aid and Preventive Aid Societies. 38 were sent away during 1935, and all had been examined and passed as suitable by the Assistant Medical Officer.

Other voluntary associations which carry on work among school children, and which give most valuable help, include the Care Committee, the Central Aid Society, and the Voluntary Association for Mental Welfare. The work which they do has been mentioned in previous Annual Reports, to which reference may be made.

The Inspector of the National Society for the Prevention of Cruelty to Children gave assistance in several cases during the year.

An Occupation Centre for low grade mentally defectives established and managed by the Cambridge Voluntary Association for Mental Welfare has been in existence since 1929. The premises used are those of the old "Hope Class" in Paradise Street. Their use has been granted free of charge to the Association by the Education Committee.

It is open in the afternoons every week-day except Saturday from 2 to 4.30 p.m. The number attending at present is twenty; of whom only seven are boys. The number under 16 years of age is twelve.

PROVISION OF MILK IN SCHOOL.

As a result of the scheme for increasing the demand for milk by reducing the price to $\frac{1}{2}$ d. per one-third of a pint, the number of children receiving milk in schools has shown a very considerable increase. In 1933 the number was 2,232. In 1935 the number was approximately 4,100.

Arrangements were made for the milk to be distributed during the Summer holidays and Christmas holidays, from two Centres:—The Municipal Health Centre, Auckland Road, and the Romsey Domestic Centre, Coleridge Road.

The average daily number of children attending was 279 during the Summer holidays, and 220 during the Christmas holidays.

The assessment of ability to pay for the milk is undertaken by the Central Aid Society, but every child recommended gets milk free of cost pending the making of an assessment. The number getting the milk free on medical grounds for any period during the year was 1,079.

COD LIVER OIL.

The number of children having cod liver oil and malt in school during 1935 was 1,664, an increase of 100 as compared with the previous year.

TEACHING OF HYGIENE IN SCHOOL.

Health Education.—The school child's education in health is, or should be, a continuation of the training which the Maternity and Child Welfare Committee provide for the infant and toddler stages of life.

In the Infant Schools much attention is paid to the inculcation of habits of cleanliness. Attention is given to cleanliness of the head, face, teeth and clothing, the use of the pocket handkerchief, the practice of mouth breathing, and the proper use of the sanitary conveniences.

These lessons are practised daily in connection with the preparation for the forenoon lunch or milk, the periods allotted to play and rest, while at the same time close touch is kept with parents by means of simple talks given by the teachers and others on such subjects as diet, sleep, clothing, etc.

Among the older children physical education is carried on by means of suitable exercises. These are regarded as an important part of the school curriculum, and abundant facilities exist in Cambridge for all forms of out-door exercises and games.

EMPLOYMENT OF SCHOOL CHILDREN.

The number of children examined and certified under the Bye-Laws regulating the employment of school children was 67.

There were 14 applications for a medical certificate for public entertainments.

DEATHS OF ELEMENTARY SCHOOL CHILDREN.

The total number of deaths in Cambridge of children 5—14 years of age during 1935 was 6.

The causes of these deaths were :—Accidents, 1; Rheumatism, 1; Broncho-Pneumonia, 1; Perinephric Abscess, 1; Anaemia, 1; Cerebral Diplegia, 1.

TABLE I.—RETURN OF MEDICAL INSPECTIONS.

A. ROUTINE MEDICAL INSPECTIONS.

Number of Inspections in the prescribed Groups.

Entrants ...	...	...	...	790
Second Age Group	...	...	...	651
Third Age Group	...	...	...	723
		Total	...	2164
Number of other Routine Inspections	...	...	...	Nil.

B. OTHER INSPECTIONS.

Number of Special Inspections	...	...	3966
Number of Re-Inspections	...	...	1404
			—
	Total	...	5370
			—

C. CHILDREN FOUND TO REQUIRE TREATMENT.

Number of individual children found at Routine Medical Inspection to require treatment (excluding Uncleanliness and Dental Diseases).

Prescribed Groups.

Entrants...	...	...	...	81
Second Age Group	...	...	...	143
Third Age Group	...	...	...	140
				—
	Total	...	364	
				—

Number of other Routine Inspections Nil.

TABLE II.—A. Return of Defects found by Medical Inspection in the year ended December 31st, 1935.

	Defect or Disease.	Routine Inspections.		Special Inspection.	
		No. of Defects	Requiring treatment.	No. of Defects	Requiring treatment.
Skin	Ringworm : Scalp	1	—	—	—
	Body	1	—	—	—
	Scabies	—	—	—	—
	Impetigo	—	—	—	—
	Other Diseases (Non-Tuberculous)	19	19	19	139
Eye	Blepharitis	5	3	38	—
	Conjunctivitis	1	—	58	—
	Keratitis	—	—	—	—
	Corneal Opacities	—	—	—	—
	Other Conditions (excluding Defective Vision and Squint) ...	1	3	116	3
	Defective Vision (excluding Squint)	59	6	82	7
	Squint	12	6	4	2
Ear	Defective Hearing	61	19	32	4
	Otitis Media	3	7	18	—
	Other Ear Diseases	1	3	15	4
Nose and Throat	Chronic Tonsillitis only ...	31	248	67	45
	Adenoids only ...	1	11	—	—
	Chronic Tonsillitis and Adenoids ...	—	3	27	—
	Other Conditions	7	14	6	—
	Enlarged Cervical Glands (Non-Tuberculous)	1	192	17	23
Heart and Circulation	Defective Speech	—	3	1	—
	Heart Disease : Organic	—	—	—	—
	Functional	—	46	6	8
	Anaemia	4	7	1	2
Lungs	Bronchitis	3	10	7	1
	Other Non-Tuberculous Diseases ...	2	4	1	—

TABLE II.—(*continued.*)

Defect or Disease.		Routine Inspections.		Special Inspections.	
		No. of Defects	Requiring treatment.	No. of Defects	Requiring treatment.
Tuber- culosis	Pulmonary :				
	Definite...	...	—	—	—
	Suspected	...	—	—	—
	Non-Pulmonary :				
	Glands	...	—	—	—
	Bones and Joints	...	—	—	—
	Skin	...	—	—	—
	Other Forms	...	—	—	—
	Epilepsy	...	—	—	—
	Chorea	...	—	—	—
Nervous System	Other Conditions...	...	—	—	—
	Rickets	...	—	—	—
Deform- ities	Spinal Curvature	...	—	—	—
	Other Forms	...	81	125	15
Other Defects and Diseases (excluding Un- cleanliness and Dental Diseases)		...	29	51	605
Total		...	335	802	1407
					145

B. Classification of the Nutrition of Children Inspected during the Year in the Routine Age Groups.

Age-groups.	Number of Children Inspected.	A (Excellent)		B (Normal)		C (Slightly subnormal)		D (Bad)	
		No.	%	No.	%	No.	%	No.	%
Entrants	790	78	9.7	657	83.4	55	6.9	—	—
Second Age-group...	651	100	15.4	487	74.8	62	9.5	2	0.3
Third Age-group	723	154	21.3	531	73.5	37	5.1	1	0.1
Other Routine Inspections	—	—	—	—	—	—	—	—	—
Total	2164	332	15.35	1675	77.4	154	7.1	3	0.15

TABLE III. Return of all Exceptional Children in the Area.

Blind Children	At Certified Schools for the Blind	—
	At Public Elementary Schools				
	At other Institutions...	...			
	At no School or Institution	...			
	Total	...	...
Partially Sighted Children...	At Certified Schools for the Blind	1
	At Certified Schools for the Partially Blind	...	...
	At Public Elementary Schools				
	At other Institutions...	...			
	At no School or Institution	...			
Deaf Children	Total		1
	At Certified Schools for the Deaf...	...	...	...
	At Public Elementary Schools				
	At other Institutions...	...			
	Total	...	...
Partially Deaf Children	At Certified Schools for the Deaf	2
	At Certified Schools for the Partially Deaf	...	...
	At Public Elementary Schools				
	At other Institutions...	...			
	At no School or Institution	...			
Mentally Defective Children	Total		3
	At Certified Schools for Men- tally Defective Children	...			
	At Public Elementary Schools				
	At other Institutions...	...			
	Total	...	...
Epileptic Children	At Certified Schools for Men- tally Defective Children	...			34
	At Public Elementary Schools				
	At other Institutions...	...			
	At no School or Institution	...			
	Total	...	...
Physically Defective Children	At Certified Special Schools				8
	At Public Elementary Schools				
	At other Institutions...	...			
	At no School or Institution	...			
	Total	...	...
II.—Children suffering from Non- Pulmonary Tuberculosis	At Certified Special Schools				3
	At Public Elementary Schools				
	At other Institutions...	...			
	At no School or Institution	...			
	Total	...	...

TABLE III.—(*continued*)

B. Delicate Children	At Certified Special Schools	105
	At Public Elementary Schools	7
	At other Institutions... ...	—
	At no School or Institution ...	—
	Total	112
C. Crippled Children	At Certified Special Schools	4
	At Public Elementary Schools	8
	At other Institutions... ...	—
	At no School or Institution ...	—
	Total	12
D. Children with Heart Disease...	At Certified Special Schools	6
	At Public Elementary Schools	1
	At other Institutions... ...	1
	At no School or Institution ...	—
	Total	8
Children suffering from Multiple Defects, Blind and Dumb ...	At Certified Special Schools	—
	At Public Elementary Schools	—
	At other Institutions... ...	—
	At no School or Institution...	1
	Total	1

TABLE IV. Return of Defects Treated during the year ended 31st December, 1935.

TREATMENT TABLE.

Group I. Minor Ailments (excluding Uncleanliness, for which see Group VI.)

Disease or Defect.	No. of Defects treated or under treatment during the year.		
	Under the Authority's Scheme.	Otherwise	Total.
Skin—			
Ringworm—Scalp—			
(i.) X-Ray Treatment ...	—	—	—
(ii.) Other „ ...	1	—	1
Ringworm—Body ...	1	—	1
Scabies ...	—	—	—
Impetigo ...	142	—	142
Other Skin Disease ...	117	12	129
Minor Eye Defects ...	178	7	185
(External and other, but excluding cases falling in Group II.)			
Minor Ear Defects ...	4	28	32
Miscellaneous ...	538	68	606
(e.g., minor injuries, bruises, sores, chilblains, etc.)			
Total ...	981	115	1096

Group II. Defective Vision and Squint (excluding Minor Eye Defects treated as Minor Ailments—Group I.)

Defect or Disease.	No. of Defects dealt with.			
	Under the Authority's Scheme.	Submitted to refraction by private practitioner or at hospital apart from the Authority's Scheme.	Otherwise.	Total.
Errors of Refraction (including squint)	124	—	—	124
Other Defect or Disease of the Eyes (excluding those recorded in Group I.)	—	—	—	—
Total ...	124	—	—	124

Total number of children for whom spectacles were prescribed

(a) Under the Authority's Scheme	...	...	92
(b) Otherwise	...	...	—

Total number of children who obtained or received spectacles

(a) Under the Authority's Scheme	...	...	74
(b) Otherwise	...	...	—

Group III. Treatment of Defects of Nose and Throat.

Number of Defects.

Received Operative Treatment.		Total.	Received other forms of Treatment.	Total number treated.
Under the Authority's Scheme, in Clinic or Hospital.	By Private Practitioner or Hospital, apart from the Authority's Scheme.			
66	—	66	—	66

Group IV, Orthopaedic and Postural Defects.

	Under the Authority's Scheme.			Otherwise.			Total number treated.
	Residential treatment with education.	Residential treatment without education.	Non-residential treatment at an orthopaedic clinic.	Residential treatment with education.	Residential treatment without education.	Non-residential treatment at an orthopaedic clinic.	
Number of children treated	1	—	57	—	—	3	61

Group V. Dental Defects.

(i) Number of Children who were :—			
(a) Inspected by the Dentist :—			
Aged :			
3 51			
4 183			
5 424			
6 529			
7 561			
8 650			
9 628			
10 685			
11 667			
12 594			
13 582			
14 261			
Routine Age Groups		Total 5815	
Specials ...	...	...	343
Grand Total	...	6158	

(b) Found to require treatment 4664

(c) Actually treated ... 4378

(2) Half-days devoted to :—

Inspection ... 41	Total 1339
Treatment ... 1279	
Administration (including teaching) ... 19	

(3) Attendances made by Children for treatment ... 4846

(4) Fillings :—

Permanent Teeth 8715	Total 8975
Temporary Teeth 260	

(5) Extractions :—

Permanent Teeth 737	Total 4580
Temporary Teeth 3843	

(6) Administrations of general anaesthetics for extractions ... 19

(7) Other operations :—

Permanent Teeth 274	Total 3406
Temporary Teeth 3132	

Group VI. Uncleanliness and Verminous Conditions.

(i)	Average number of visits per school made during the year by the School Nurses	...	...	...	7
(ii)	Total number of Examinations of children in the Schools by School Nurses	...	...	...	20,203
(iii)	Number of individual children found unclean	...	...	...	689
(iv)	Number of children cleansed under arrangements made by the Local Education Authority	...	...	...	Nil
(v)	Number of cases in which legal proceedings were taken :				
	(a) Under the Education Act, 1921	...	...	...	Nil
	(b) Under School Attendance Bye-Laws	...	...	...	10

R E P O R T
ON
DENTAL INSPECTION
AND
TREATMENT OF SCHOOL CHILDREN
FOR THE YEAR 1935

BY
W. BAIRD GRANDISON, L.D.S., R.C.S., Edin.
PUBLIC DENTAL OFFICER

THE DENTAL TREATMENT CENTRE,
 AUCKLAND ROAD,
 CAMBRIDGE.

December 31st, 1935.

To the Chairman and Members of the Education Committee.

LADIES AND GENTLEMEN,

I have the honour to submit the Twenty-eighth Annual Report on the working of the Dental Institute for the year 1935 (January 1st to December 31st, inclusive).

The Committee will remember that for the last few years the dental scheme for the inspection and treatment of elementary school children in the Borough of Cambridge suffered considerably from factors over which we had little or no control. During the year 1935, however, the addition to the staff of a third dental officer (whole-time) has so altered the situation that in the year 1936 we shall be able to inspect the teeth of all elementary school children in our area and treat the teeth of all who require attention.

The Committee will note with satisfaction that the statistics contained in this report indicate an improved condition of the teeth of our school children, and this is due in the main, to the excellent all-round work of my assistants, Mr. C. Harris and Mr. R. B. Pickles.

I record my thanks to my assistants, and also to the dental attendants for their active support and profound interest in the working of our scheme.

I am,

Ladies and Gentlemen,

Your obedient Servant,

W. BAIRD GRANDISON.

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Report on the Dental Inspection and Treatment of Elementary School Children

FOR THE YEAR 1935.

The Twenty-eighth Annual Report on the working of the school dental service of the Borough of Cambridge covers the period from January 1st, 1935, to December 31st, 1935, inclusive. The staff (all whole-time officers) comprises one senior dental officer and two assistant dental officers, together with three dental attendants. The number of sessions allocated to the administration of the school dental service, and to the dental inspection and treatment of elementary school children was 1382 sessions. The average number of elementary school children on Registers during the year 1935 was 7436, and, although all the schools in the Borough were visited with the exception of the New Senior School at Chesterton which was only opened in September, 1935, Morley Memorial Mixed and Infants' and Cherry Hinton, the number of children coming under the purview of this report is 6213 excluding casuals.

(1)	Children coming under routine dental inspection	...	...	...	...	...	(1)	5815
* (2)	Children who were inspected by the dentist and who had minor defects in Temporary Teeth, which in the opinion of the dentists did not require treatment	...	...	...	...	...	(2)	398
								6213
(3)	Casuals	...	...	...	...	...	(3)	343
								6556

* Statistics relating to the teeth of these children are not detailed in this report.

In the year under review 5815 children were submitted for routine inspection. Of this number 1494 were found to have sound dentitions, 4321 required treatment, and 4035 received complete treatment. In addition 343 children attended without appointments and received treatment, making a total number of 6158 children inspected and 4378 treated. The total number of attendances made by 4378 children was 4846.

DENTAL INSPECTION.

The dental inspection of routine cases is conducted at the schools, and only those cases whose teeth are apparently sound to the naked eye are asked to take the chair to undergo a minute inspection with probe, mirror and floss silk. All the teeth of children passed as sound are duly

charted at the time of inspection, the remainder being notified that dental treatment is necessary, and accurate charting follows the completion of the treatment. The hours of work are from 9 a.m. to 12.30 p.m., and from 2 p.m. to 5 p.m., or until the work of each session is completed. The number of sessions devoted to all branches of public dental work during the year 1935 was 1425 of which 1382 were reserved for school dental service.

Number of Sessions devoted to :	Mr. W. B. Grandison.	Mr. R. B. Pickles.	
		Mr. C. Harris.	
(1) Administration ...	17	2	0
(2) Inspection ...	11	9	21
(3) Routine Treatment ...	414	426	439
(4) Orthodontic Treatment	0	43	0
(5) Maternity and Child Welfare Dental Work	43	0	0
 Total ...	 485	 480	 460

(1) Administration sessions include attendance by the Senior Dental Officer at the appropriate Committees of the Borough Council, time spent in organisation, preparation of Reports, etc.

(2) Inspection : Three dental officers have been engaged together with three dental attendants during 41 sessions in the inspection of 5815 school children, that is, the equivalent of approximately 141 children per session.

(3) Routine Dental Treatment : The number of sessions devoted to the dental treatment of elementary school children was 1279, a greatly increased number, and as a result, I am more than pleased to report that all arrears have already been overtaken, and we are once again in the happy position of being able to inspect, and if necessary, to treat every school child at least once in each year, a condition which, it is well known, is essential for the success of any scheme of school dentistry.

(4) Orthodontic Treatment : In Cambridge, at least, the incidence of dental caries is such that I find it necessary to give the maximum time to conservative treatment of permanent teeth. One predisposing cause of dental caries is undoubtedly irregularity of the teeth, and a very large percentage of our elementary school children show irregularity to a greater or lesser degree. At the same time orthodontic work is highly specialised, that is to say, work which cannot be undertaken successfully by anyone who has not devoted considerable time to the study of the problem and its application. Further, much time is spent in the manufacture of appliances, and in their adaptation, and regular visits on the part of the children concerned are necessary, extending over the greater part of two years, before the completion of the treatment. For this reason, we do not suggest orthodontic treatment to parents whose children obviously require orthodontic attention, but merely acquiesce when parents themselves, in their anxiety to avoid serious irregularity in the teeth of their children press for treatment, and offer their whole-hearted co-operation, essential to acquire that measure of success which is desired. Mr. C. Harris, who received a sound training in Orthodontia at the Eastman

Dental Clinic, London, prior to his appointment in Cambridge, is entrusted with the Orthodontic care of some 32 children, which occupy his full attention for 43 sessions during the year, mainly Saturday mornings.

(5) Maternity and Child Welfare Dental Work : Strictly speaking, work under this heading does not come under the purview of this report, but it is nevertheless interesting to record that I have personally allocated 43 sessions to dental inspection and treatment of Expectant and Nursing Mothers recommended by the Medical Officers in charge of the Maternity Centres, and also to children of those parents who have not yet entered our elementary schools.

CONDITION OF THE TEETH AT INSPECTION.

5815 elementary school children were inspected during the year 1935. Of this number 816 were new patients, that is, patients who had never been subjected to routine dental inspection before in Cambridge ; 470 children were sound previously, that is, patients who had been previously inspected, but the teeth were such that no treatment was required ; the remainder, 4529 children, had been inspected and had received treatment in previous years.

The condition of the teeth of 5815 children, divided into their respective age groups, follows :—

Age.	Number of Children Examined	Number of Temporary Teeth			Number of Permanent Teeth		
		Sound	Decayed Saveable	Decayed Unsaveable	Sound	Decayed Saveable	Decayed Unsaveable
3 Years	51	897	109	10	—	—	—
4 "	183	3038	487	96	2	—	—
5 "	424	6632	1124	425	193	108	—
6 "	529	7902	821	562	1255	415	2
7 "	561	6863	420	615	3357	839	18
8 "	650	5803	256	649	6103	1024	38
9 "	628	4550	106	580	7336	803	78
10 "	685	3554	89	382	9959	1009	138
11 "	667	1896	27	250	12298	990	112
12 "	594	898	1	120	12353	1227	145
13 "	582	274	1	43	13314	1377	139
14 "	261	18	—	3	6341	462	55
Total ...	5815	42325	3441	3735	72511	8254	725*

* Includes 62 permanent teeth extracted for irregularity only.

For every 100 elementary school children in Cambridge therefore there are 728 sound temporary teeth, 59 saveable temporary teeth, 64 unsaveable temporary teeth, 1247 sound permanent teeth, 142 saveable permanent teeth, and 12 unsaveable permanent teeth.

CONDITION OF THE TEETH AFTER TREATMENT.

4035 elementary school children received dental treatment (Routine) during the year 1935, and the effect of treatment can best be appreciated by arranging a comparative table, giving the results of dental inspection, together with the rearrangements which naturally follow as a result of treatment.

	No. of Children Examined.	Temporary Teeth.			Permanent Teeth.		
		Sound.	Decayed Saveable.	Decayed Unsaveable.	Sound.	Decayed Saveable.	Decayed Unsaveable
Condition of teeth at Inspection ...	5815	42325	3441	3735	72511	8254	735
Condition of teeth after Treatment ...	5815	45634	132	191	80061	704	62

This comparative table shows that after treatment .8 per cent. of teeth remain carious in the mouths of 5815 children, and .07 per cent. of the permanent teeth are unsaveable and require extraction.

From a study of the Statistics relating to the inspection of the teeth of the permanent dentition in the Summary of all examinations, one or two interesting details are worth elaborating. One finds, for example, that the percentage of decayed permanent teeth is not only greater, but much greater, in the five year old group of children than in any other age group. This seems to furnish proof to the statements so often repeated by numerous dental officers, that the incidence of caries in the five year old group of children is particularly high, and indicates further the vulnerability of the first permanent molar to attack from caries. A very keen inspection of the erupted permanent teeth of the five year old group of children is therefore specially called for, and adequate treatment effected at the earliest possible moment. Indeed, one cannot exaggerate the importance of early dental inspection and treatment of the permanent dentition, because during the ages 5, 6 and 7 dental officers are principally and obviously concerned with the eruption of the first permanent molars and their preservation.

Assuming, therefore, that the utmost dental vigilance has been enacted during the early years of school life, statistics likewise seem to prove that with ordinary care and skill the tendency which many permanent teeth have to progressive caries is definitely checked, so that the possibility of children leaving school with all the permanent teeth present and in a healthy condition is by no means beyond the bounds of possibility.

ROUTINE DENTAL WORK.

The nature and quantity of the work necessary to treat satisfactorily 4035 elementary school children was as follows :— *

FILLINGS	A.	Amalgam or Synthetic	...	...	4677 (7255)
	B.	Amalgam (Lined) or Synthetic (Lined)	...	...	3681 (2806)
	C.	Amalgam or Synthetic with Pulp Preservation	...	...	407 (328)
		Amalgam or Synthetic with Root Canal Treatment	...	...	126 (113)
Total		...	...	8891 (10502)	_____
EXTRACTIONS	D.	Teeth treated with Nitrate of Silver (Howe's Method)	...	...	3361 (3903)
	E.	Temporary Teeth	...	...	3544 (2659)
		Permanent Teeth...	...	...	663 (696)
	Total operations		...	7568 (7258)	_____
Total operations		...	16459 (17760)	_____	

* Figures in brackets are the corresponding figures for the year 1934.

CASUALS.

In addition to the work recorded above, work was performed on certain children who visited the dental treatment centre without an appointment. 343 children come under this category, and the treatment was as follows :—

FILLINGS	A.	In Permanent Teeth	...	...	74 (204)
	B.	In Temporary Teeth	...	...	10 (12)
EXTRACTIONS	C.	Of Permanent Teeth	...	...	74 (131)
	D.	Of Temporary Teeth	...	...	299 (660)
E.		Teeth treated with Nitrate of Silver (Howe's Method)	...	45 (457)	

Anaesthetics, local or general, are always used for the extraction of teeth and regional anaesthesia for filling.

* Figures in brackets are the corresponding figures for the year 1934.

A pleasing feature of the report for the year 1935 is the considerable reduction recorded in the number of children to whom the name casual must be applied, as this clearly indicates progress in two directions. First : The reduced necessity for urgent treatment ; and Second : A sound and constructive method of dealing with school children who had previously rejected the suggested form of treatment. If one recorded as "casuals" all those children who visited the dental treatment centre without appointment during the year one would require to multiply the existing figure at least three times. Certain children (previous refusals of course) desire treatment for the relief of pain, and on inspection the dental officer finds perhaps an aching temporary tooth or, less frequently, even an aching permanent tooth, and in addition a tooth or teeth which are saveable. Parents of such children must approve the policy of rendering the teeth healthy, and failure to comply with this policy naturally necessitates application for treatment from some source outside the precincts of the dental treatment centre. Fortunately, the unpleasantness which generally follows such a course is restricted to a very small percentage of parents, and so a means to convert what would have been a casual patient into one seeking routine dental treatment is effected.

Children thus treated very seldom refuse a second time. They have seen, and so too have many of their parents, that there is nothing very dreadful after all in the dental treatment of school children. Further, such parents can appreciate from our talk that dental officers in charge of dental treatment centres cannot permit the indiscriminate loss of teeth, but must, on the contrary, strive by every legitimate means to carry out the principle involved in a system of School Dentistry, namely, to permit children to leave school with all the erupted permanent teeth present and in a healthy condition. Loss of permanent teeth is a calamity which can and must be avoided.

Age.	Number of Children Examined.	No Decay including Both Dentitions.		Remarks.
		Number of Children.	Percentage.	
5 Years ...	424	82	19 approx.	A. Children with no decay present number 1418.
6 " ...	529	91	17 "	
7 " ...	561	80	14 "	
8 " ...	650	142	22 "	
9 " ...	628	168	27 "	
10 " ...	685	180	26 "	
11 " ...	667	244	36 "	
12 " ...	594	200	34 "	
13 " ...	582	147	25 "	
14 " ...	261	84	32 "	
Total ...	5581	1418	25.4 "	

Age.	Number of Children with Permanent Teeth.	Number of Children whose Permanent Teeth were						Unsaveable but Untreated.
		Sound.		Made Artificially Sound.		Saveable but Untreated.		
		%	%	%	%			
5 Years...	84	34	40	46	55	4	5	—
6 „ „	331	142	42	164	50	25	7	—
7 „ „	533	187	35	322	60	24	5	—
8 „ „	647	225	34	391	60	30	5	4
9 „ „	628	282	45	319	51	25	4	2
10 „ „	687	280	41	372	55	31	4	4
11 „ „	667	300	45	335	50	31	5	4
12 „ „	594	242	40	310	53	41	7	6
13 „ „	582	172	30	368	63	42	7	9
14 „ „	261	98	37	152	59	11	4	4
Total ...	5014	1962	39	2779	56	264	5	33

* Ages 3 and 4 are omitted.

The unsaveable permanent teeth which numbered 725 in the mouths of 5815 children at inspection were distributed thus:—

352	children had	1	unsaveable	tooth	each.
121	„ „	2	„	teeth	„
21	„ „	3	„	„	„
17	„ „	4	„	„	„

Total 511 children had 725 unsaveable teeth.

It should be noted that all sound or saveable permanent teeth removed for orthodontic purposes are charted as unsaveable, and are included in the above table.

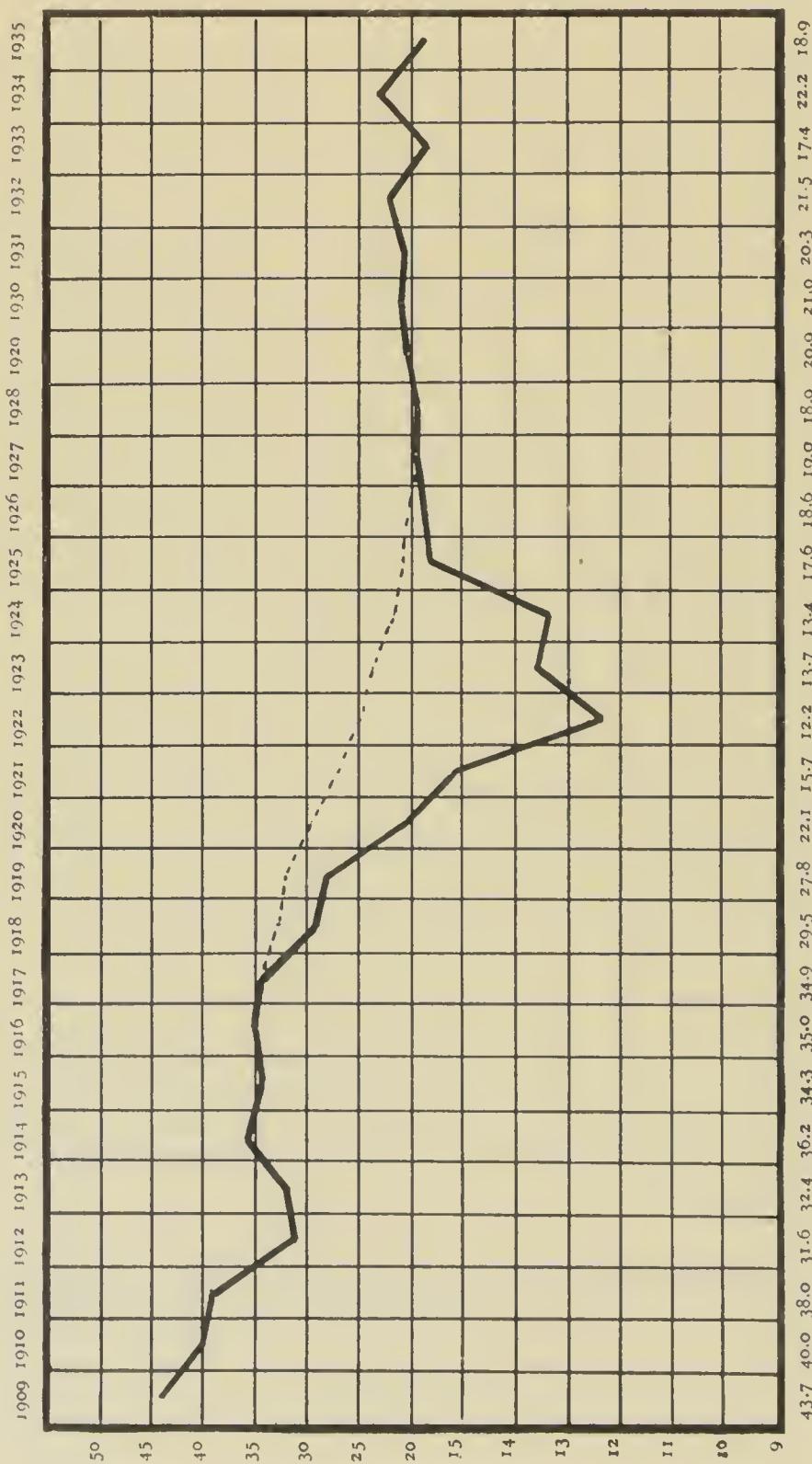
The preceding statistical tables indicate a gratifying all round general improvement in the condition of the teeth of the elementary school children of the Borough of Cambridge. The children with no decay present in both dentitions number 1418 this year, as compared with

693 in the year 1934, and children with sound permanent teeth number 1962 this year as compared with only 971 in the year 1934. I have, this year, more than usual, made numerous inspections of the teeth of children more particularly after treatment, and I am convinced that the improved condition tabulated is dependent upon the excellent conservative work carried out by both my assistants, Mr. C. Harris and Mr. R. B. Pickles. I have frequently impressed these officers with the importance of conducting conservative operations, as far as possible, of a permanent nature, to sacrifice time rather than efficiency with the result that not only have I seen cavities thoroughly well extended, but also sound fillings inserted, many of which have been polished. Workmanship, therefore, is of a very high standard, but while thus expressing satisfaction and pointing out the benefits derived from conscientious endeavour one must at the same time indicate shortcomings. Our inspections, and in this my assistants are in full agreement, are to some extent ineffective. The procedure adopted, one might think, left no grounds for complaints, in so much that every child who appears to have sound teeth is not passed as sound until the teeth have been thoroughly inspected by the aid of probe and mirror. Nevertheless, school children present themselves for treatment year after year with cavities generally mesial or distal in premolars and molars, cavities, the extensive nature of which indicate that they were assuredly missed at the previous annual inspection. Such cavities demand a tedious preparation, edge strength must be maintained so that the filling, when inserted, will bear the strain of mastication, the filling must be shaped to resemble that portion of the tooth which is lost, and the contact point should be restored. This procedure, therefore, takes time, and this will account in no small measure for the decrease in the number of conservative operations performed during the year 1935. Inspection by probe and mirror, it must be assumed, is an insufficient aid to a correct diagnosis but, with the installation of an X-ray apparatus this, together with many other difficulties which beset dental surgeons in the practice of dental surgery will be largely eliminated.

Children who were inspected and required treatment, but who did not receive treatment, numbered 286, being 6.6 per cent of those requiring treatment, and 4.9 per cent. of the total number inspected. Percentages such as these in a voluntary system of school dentistry give much satisfaction, and call for little or no comment beyond rendering my thanks to those responsible, notably members of the teaching profession and the dental attendants.

2779 children had any necessary permanent teeth made artificially sound, and as the number of fillings inserted in the permanent teeth of routine cases was 8641, the average number of fillings per child was 3.1.

Diagram.—Showing the percentage of decay in the temporary teeth of the five year old group of children from 1909 to 1935 (inclusive).



The Dotted Line gives the assumed course dealing with dental disease in the 5 year old group of children in the absence of a War Period.

It is obvious to anyone reading the report of the Chief Medical Officer to the Board of Education for the year 1934 on "The Health of the School Child" that reference to details beyond the usual statistical summaries is much appreciated if not expected. The opinion of dental officers with reference to teeth which are naturally sound on the one hand, and unusually unhealthy on the other hand, is particularly requested. Accordingly, though I find it difficult in my enthusiasm, to refrain from stressing any particular point or points that appeal to me personally, I will endeavour to outline a few facts of interest suggestive, perhaps, of some useful line of research. First permit me to draw attention to the graph (above) which has for years now, formed part of the annual report of the public dental officer to the Borough of Cambridge, and which deals with the percentage of decay present in the five year old age group of children at inspection. It is surely noteworthy that the teeth of children born in the year 1917 and who, by the year 1922, had attained the age of five years, should show a percentage of decay of only 12.2 per cent., the lowest percentage ever recorded before or since. Further, during the years these children attended school an average of 60 per cent. were found to have sound permanent teeth. In the remainder the minimum of dental treatment was necessary in order to render artificially sound permanent teeth which had decayed, while the number of unsaveable permanent teeth was 7 in every 100 children.

What are the facts and inferences : Great Britain was at this time (1917) in the throes of the greatest war in living memory, and those at home suffered certain drastic restrictions both in the quantity and nature of the food supply. Briefly, the majority of carbohydrate foods, refined sugar and white-bread was either unobtainable or obtainable only in small quantities, whereas locally at least my information reveals an adequate supply of green vegetables, fruit and milk. Again, expectant mothers, though subject at intervals to much anxiety, had more time for rest, so too had the children.

To assume that these facts taken collectively, had an important influence on the dental health of the Nation is reasonable. It is possible, if not probable, that such conditions affected the structure of teeth and self-cleansing foods prevented acid-forming bacteria, the exciting cause of dental caries. The graph clearly indicates that good teeth coincides with the drastic reduction of soft, sticky and starchy foods and sugar, the re-introduction of which tends to produce an opposite effect. The first inference, therefore, is "The greater the consumption of carbohydrate foods and sugar the greater the percentage of decay in teeth."

Second : "Clean teeth do not decay," is an adage by no means freely accepted, but sufficiently true in my opinion to merit attention. There is, at present, a marked tendency to overcrowding of the teeth of children, contact points which protect the mesial and distal surfaces of teeth are absent, the surfaces themselves being in contact, so that food is pushed between the teeth in the process of mastication, and thorough cleaning of the teeth becomes a formidable task which cannot be accomplished by the use of a tooth brush alone. Floss silk, careful rinsing of the mouth and teeth and even a liquid spray may be necessary to ensure clean teeth.

It is this difficulty involving time, labour and some expense, which creates in the sceptical the idea that clean teeth do decay. Whatever the belief, it is quite definitely my experience that children, with no obvious claim to an immunity, who endeavour to keep their teeth clean, have teeth much less frequently attacked by caries than those who do not.

The second inference, therefore, is that cleanliness of the teeth must be practised to ensure sound teeth.

Third : Gross decalcification of the enamel in school children, extensive cervical cavities in the lower incisors in addition to numerous cavities in other teeth is happily very rare, and I have no hesitation in saying is always associated with toxæmia of long standing. Such a child, when presented for inspection is ill, or has been ill for a long period, and is slowly recovering from a succession of illnesses covering the greater part of the child's life. A child so afflicted has the misfortune to be removed from the dental scheme, as it is considered constructive work is not possible. Early loss of teeth and replacement by artificial substitutes is an inevitable result.

The third inference, therefore, is " That gross decalcification of teeth is not associated with the healthy child, but is symptomatic of some grave metabolic disturbance, or is secondary to some prolonged generalised infection.

Fourth : A medical officer with whom I am associated, conducted a scheme whereby a small number of expectant mothers and their offspring were given a daily ration of Cod-Liver Oil (Vitamin D). This experiment inspired by the research of Mrs. Mellanby was definitely controlled and assiduously performed, and I was invited to inspect the teeth at frequent intervals. Unfortunately the experiment failed to have the desired effect. Many temporary teeth were carious, while in every case the children required fillings in all first permanent molars before the completion of their seventh year.

The fourth inference, therefore is that Cod Liver Oil added to the diet is insufficient in itself to ensure sound teeth.

Fifth : Immunity or freedom from attack by dental caries furnishes an interesting though not enlightening study, and the investigation which I conducted, and which will be indicated forthwith, covers 30 children only, whose ages varied between 12 and 14 years. These children who had been inspected for years had teeth (temporary and permanent) naturally sound throughout. No attempt was made to keep the teeth clean by means of the toothbrush, and the food supplied to these children contained an excess of carbohydrates. All these children had a relative or relatives with whom they lived suffering from pulmonary tuberculosis, but the children though obviously exposed to infection showed no clinical or radiological manifestations of the disease. During this period of their existence, therefore, medical evidence seems to indicate that by repeated small doses of infection from tuberculosis the children have established, for a time at least, resistance to the disease. The interesting fact from a dental standpoint follows, namely : " The teeth of these children have remained free from attack by dental caries."

The fifth inference, therefore, is " that teeth of children exposed to a chronic infection, but who have acquired an immunity are naturally sound.

I have endeavoured in the foregoing passages to offer brief comments on points of dental interest arising in the fulfilment of my duties as a dental officer which, though they contribute nothing to the prevention of dental disease, might provide some data from which some useful research could be inaugurated.

GROUP IV.—DENTAL DEFECTS.

(1) Number of children who were :—

(a) Inspected by the Dentists :

Routine Age Groups	Aged.		5815
	3	...	51
	4	...	183
	5	...	424
	6	...	529
	7	...	561
	8	...	650
	9	...	628
	10	...	685
	11	...	667
Specials		...	343
Grand Total		...	6158

(b) Found to require treatment	...	...	...	4664
(c) Actually treated	...	...	...	4378
(d) Re-treated during the year	...	...	...	3338

(2) Half-days devoted to :

Inspection	41	1339
Treatment	...	...	...	1279
Administration	...	...	...	19

(3) Attendances made by children for treatment ... 4846

(4) Fillings :

Permanent teeth	8715	8975
Temporary teeth	260	

(5) Extractions :

Permanent teeth	737	4580
Temporary teeth	3843	

(6) Administrations of general anaesthetics for extractions 19

(7) Other operations :

Permanent teeth	274	3406
Temporary teeth	3132	

OTHER OPERATIONS.

Orthodontic cases	...	...	...	...	...	32
Jaw injuries	...	...	...	...	...	<i>Nil</i>
Crowns or inlays	...	...	...	...	...	13
Dentures	...	...	...	...	...	5
*Cleaning of teeth by Dental Attendants under supervision	...	...	...	...	...	151
Gas cases	...	...	...	...	...	19

* This figure is greatly reduced I regret to say, but with routine dental work demanding so much of our attention, adequate supervision of the dental attendants engaged on this work was not possible. To conduct this important branch of preventive dentistry, to give adequate attention to children in the recovery room, and more especially to work in connection with Maternity and Child Welfare, another appointment of a dental attendant is certainly justified, before we can further the activities of the dental treatment centre to any marked extent.